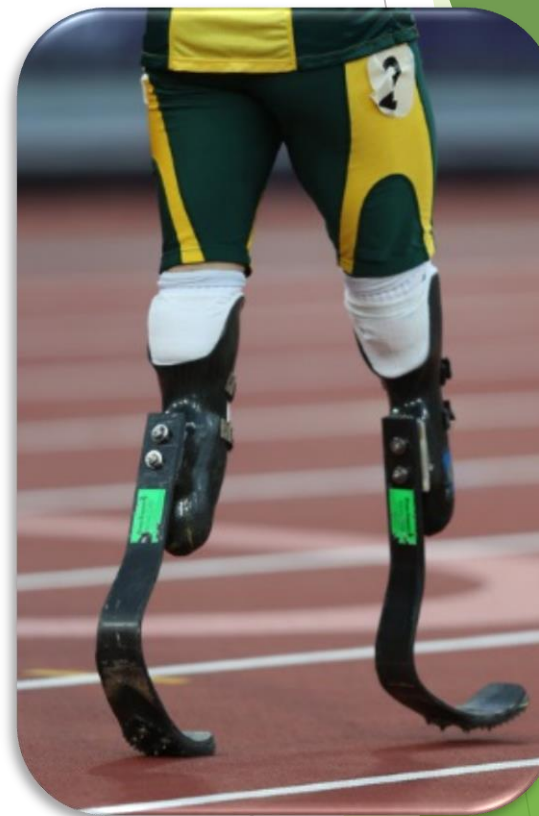
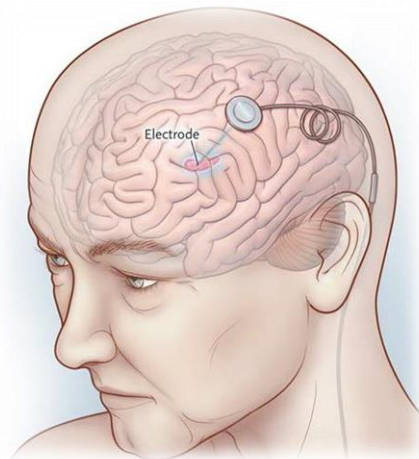
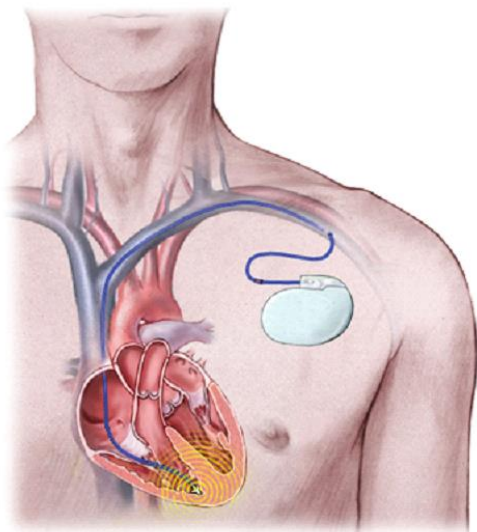


Cyborgs and biohacking

From grinders to synthetic biology

Massimiliano Simons

Hacking the body?





Quantified Self

self knowledge through numbers

YOU ARE JUST A NUMBER

Can you make yourself healthier and happier by logging every snore, step and mood swing? As a Californian trend for obsessional data-tracking makes its way over here, **Tim Chester** covers his body in gadgets to find out if self-knowledge is power. Photograph by Paul Stuart

Today I have climbed the equivalent of a tall giraffe. Coffee is my most frequent food. On average, I walk 11,726 steps a day, burning 3,089 calories, over 24 hours of activity. I sleep for 6 hours and 9 minutes a night. This week, my sleep efficiency is 72% and my food is 77% healthy. My BMI of 23.5 is 14 percentage points below the median for men my age, and my average daily Met score is 1.71, although I have no idea what a Met score is.

I am, it seems, nothing more than a bundle of numbers and milestones, spurred on by LEDs and chided by pop-up messages. A wireless accessory for the iPhone; perhaps its most sophisticated yet.

My arms are covered in bands, my pockets augmented with accelerometers, my eyes numb from all the charts, my heart pumping to the beat of a heart-rate monitor and forcing its ventricles to keep up with the national average. My head is about to implode from all the positive affirmation and gentle nudging, but it's OK because my memories are being saved to my hard drive and my mood swings are earning me "hugs" from strangers.

I am producing, analysing and socially sharing personal data. I am becoming fitter, happier, and more productive. I am staying motivated by earning badges. I have become a Quantified Self (QS).

The QS movement that I've temporarily joined began, as these things tend to do, in San Francisco's Bay Area in 2007. Two Wired magazine editors, Gary Wolf and Kevin



QUANTIFIED
SELF

369 MINS
Sleep per night

24
Hours of
nonstop video

73
bpm heart rate

3,324
Nike FuelBand
score

582
photos logged

11,726
steps walked

3,089
Calories burnt

Grinders

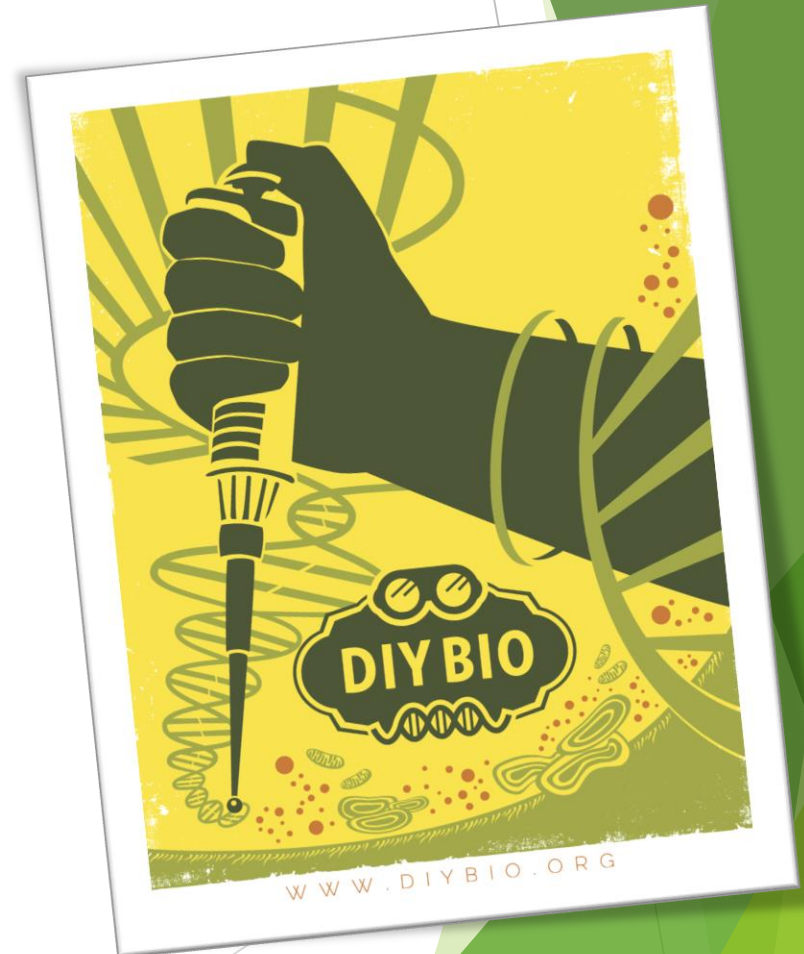


Grinders



Are we cyborgs yet?

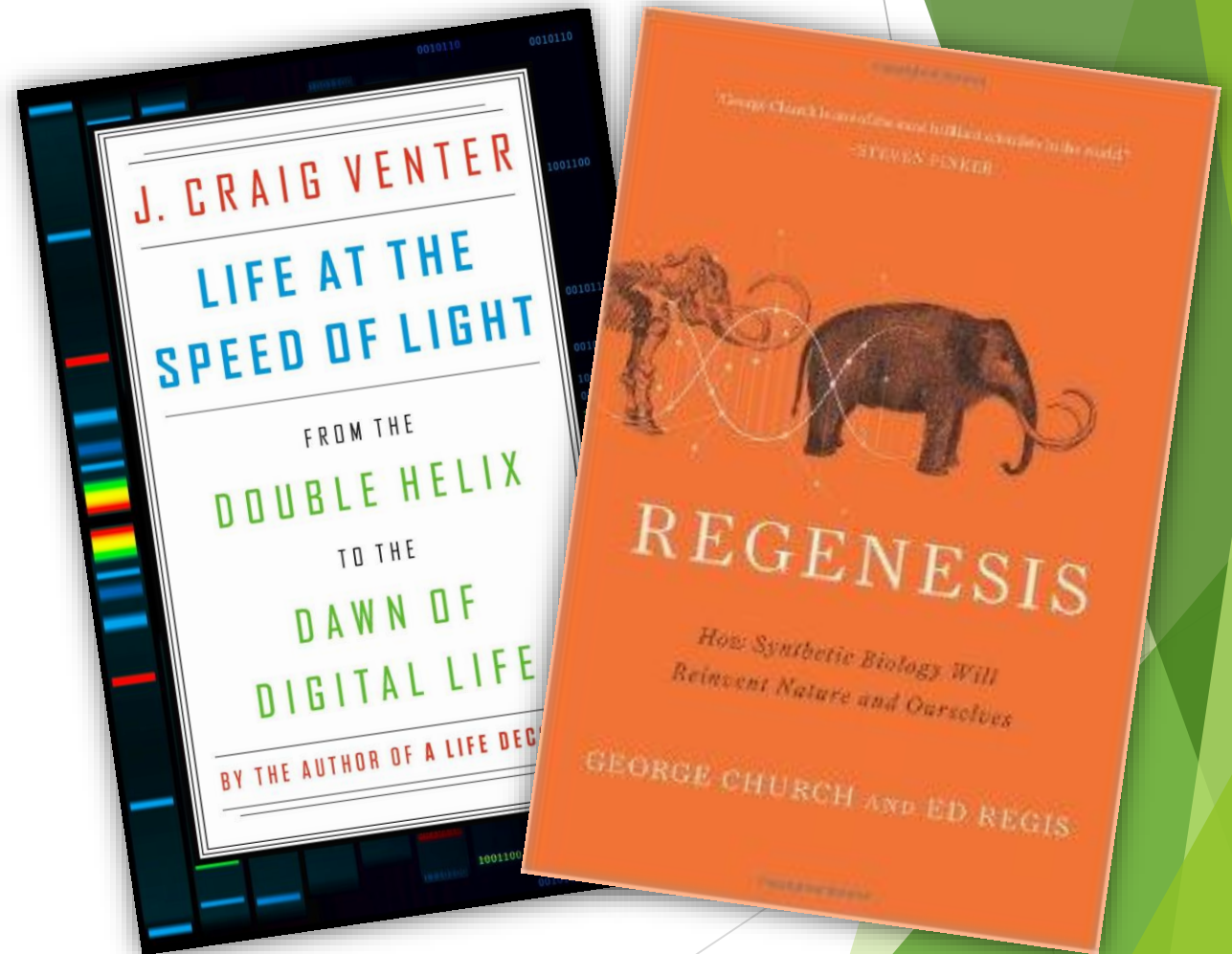
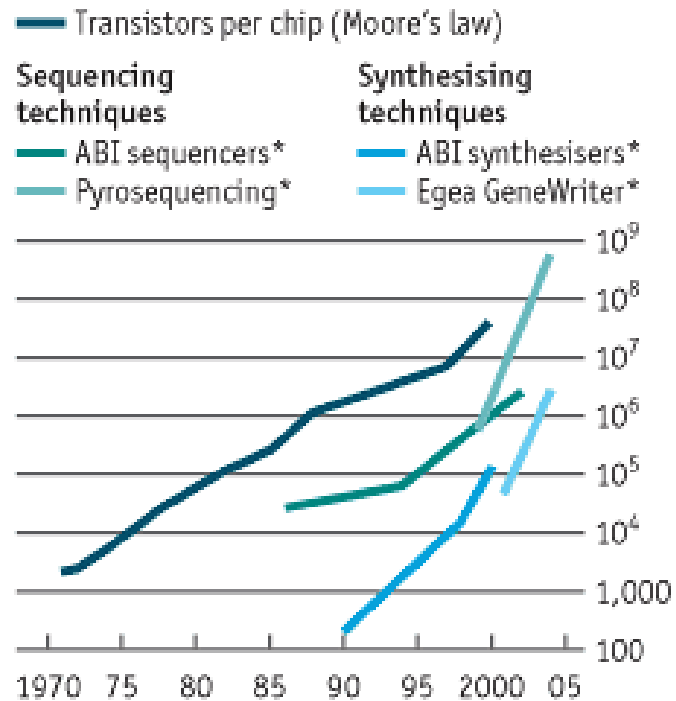
- ▶ Church of Body modification, biohack.me, BMEZine, ...
- ▶ Body hacktivism
- ▶ Biohacking: DIY biology



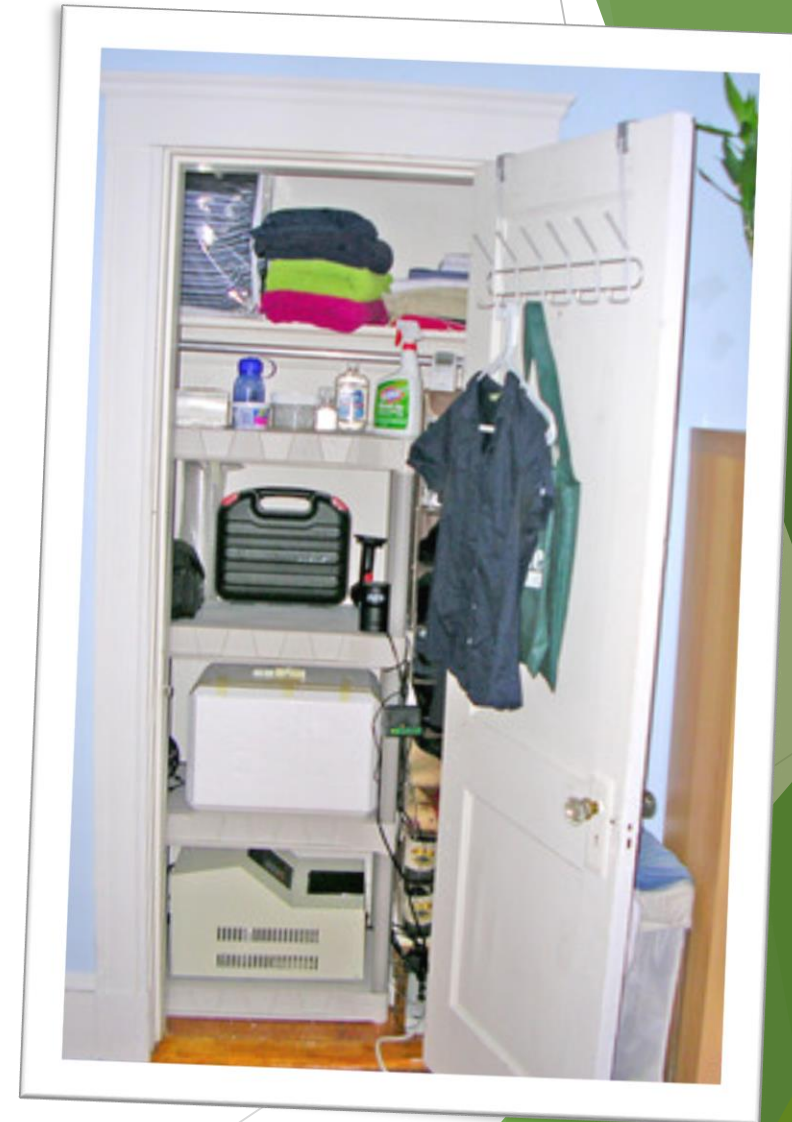
Synthetic Biology

Moore's law and Carlson's curve

Productivity improvements in DNA sequencing and synthesis, compared with Moore's law
Oct 2002, Log scale



DIY Biology

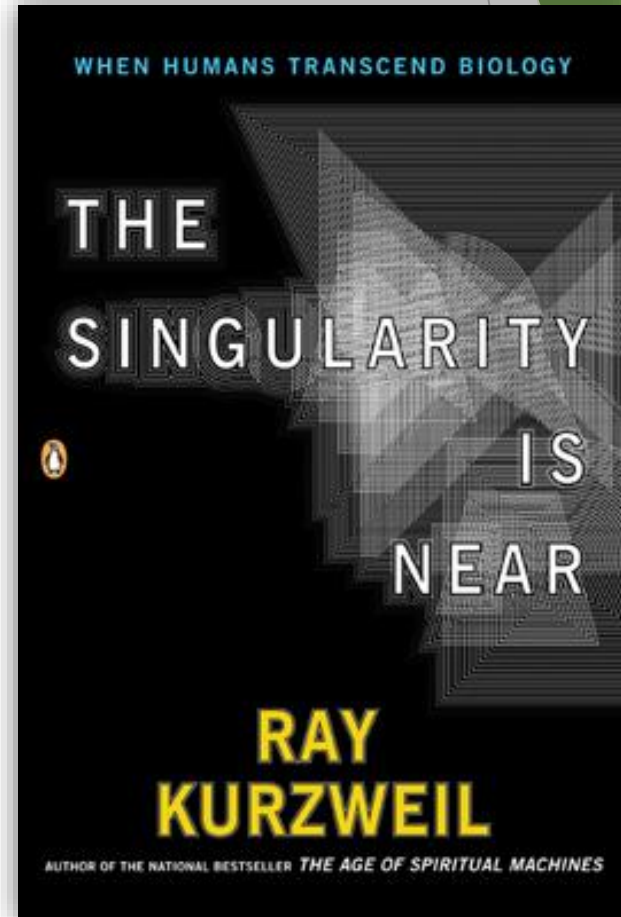


Emancipation from evolution?

“ But then, one evil day, a cell resembling a primitive bacterium happened to find itself one jump ahead of its neighbors in efficiency. That cell, anticipating Bill Gates by three billion years, separated itself from the community and refused to share. Its offspring became the first species of bacteria—and the first species of any kind—reserving their intellectual property for their own private use.

Now, after three billion years, the Darwinian interlude is over. It was an interlude between two periods of horizontal gene transfer. ”

~ Freeman Dyson, “Our biotech future” (2007)



Cyborg Society?

- ▶ Problem of inequality
- ▶ Problem of gender
- ▶ Problem of naturalness
- ▶ ...



History of body modification

- ▶ “It has always been this way!”
- ▶ Group or individuality?
- ▶ Functional or cosmetic?

